

MGG 09005019

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GEOSCIENCES

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Laboratory Item No. 227

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227

Title: A SUMMARY OF SEDIMENT SIZE, COMPOSITION
AND ENGINEERING PROPERTIES FOR DMR
PROJECT R-006; JANUARY 1964

Prepared by: David S. Hill
Robert K. Cser
Joseph H. Rohrbach

Eng. Proj.
on shelf

April 1965

Geological Laboratory Branch
Ocean Surveys Division
Oceanographic Surveys Department

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EXPLANATION OF DATA PAGES
CORE ANALYSIS SUMMARY SHEET
Sediment Size and Composition
NAVOCEANO (EXP) 3167/18A (Rev. 1-63)

Results of, sediment-size and -composition, core analysis performed by the U. S. Naval Oceanographic Office Geological Laboratory are recorded on Core Analysis Summary Sheet Sediment Size and Composition.

The following is a description of the terms employed on the Core Analysis Summary Sheet:

1. Cruise Number. A number assigned to each cruise for identification purposes.
2. Latitude. Expressed in degrees, minutes, and seconds.
3. Longitude. Expressed in degrees, minutes, and seconds.
4. Sample Number. A consecutive number, commencing with 1, applied to each core taken successively throughout the cruise.
5. Date Taken. Day (GMT), month, and year.
6. Water Depth (m). The uncorrected sonic sounding recorded in meters.
7. Type Corer. Identified by name of device employed.
8. Core Length (cm). Recorded in centimeters as observed in the laboratory.
9. Core Penetration (cm). Recorded in centimeters as observed in the field.
10. Laboratory Number. A reference number assigned to a fraction of a sample retained by the laboratory.
11. Subsample Depth in Core (cm). Interval of subsample as measured in centimeters from the top of the core.
12. Color (GSA Rock Color Chart). Based on the Geological Society of America Rock-Color Chart. F or L indicates where color determination was made. For those samples where color was determined in the laboratory, the sample was moistened for a color determination.
13. Odor. A qualitative description of any noticeable odors.

14. Size and Composition Analysis.

a. through n. Sample fraction diameter size values are based on dry weight and are given in millimeters to the nearest whole percent. An American Instrument Company sieving machine and U. S. standard sieves were used for determining sand and larger fractions ($> .062\text{mm}$). The pipette method, based on Stokes' Law (for computing settling rates of spherical particles), was used to determine silt size (.062 to .004mm) and clay size particles ($< .004\text{ mm}$).

o. Median Diameter (mm). Is the middle most member of the distribution curve above which 50 percent of the diameters in the distribution are larger and below which 50 percent of the diameters are smaller expressed in millimeters.

p. Sorting Coefficient. Is the square root of the ratio of the two quartiles, so chosen that the value is always greater than unity. (Trask 1932).

$$\text{Sorting Coefficient} = \sqrt{\frac{Q_{25}}{Q_{75}}}$$

q. Skewness. Is a measurement of the asymmetry of the curve in such a way that departure of the mean from the median is independent of the spread or deviation of the curve. Expressed in millimeters to the nearest hundredth with the given value computed from Trask's formula.

$$\text{Skewness} = \frac{Q_{25} - Q_{75}}{\text{Median Diameter}^2}$$

r. Standard Deviation (mm). A measure, in millimeters, of the degree of spread or degree of dispersion of the data about the central tendency.

$$\text{Standard Deviation} = \sqrt{\sum_{i=1}^n (X_i - \bar{X})^2 / (n-1)}$$

s. Sediment Type. Determined by sand, silt, and clay ratios of the sample based on the F. P. Shepard sediment triangle (as modified) shown in Figure B-1.

t. and u. Dominant and Secondary Minerals (%). Percentage of fraction volume of the dominant and secondary minerals.

v. Calcium Carbonate (%). Percentage of total sample weight determined by EDTA method.

w. Organic Carbon (%). Percentage of total sample weight determined by Allison method.

15. Remarks.

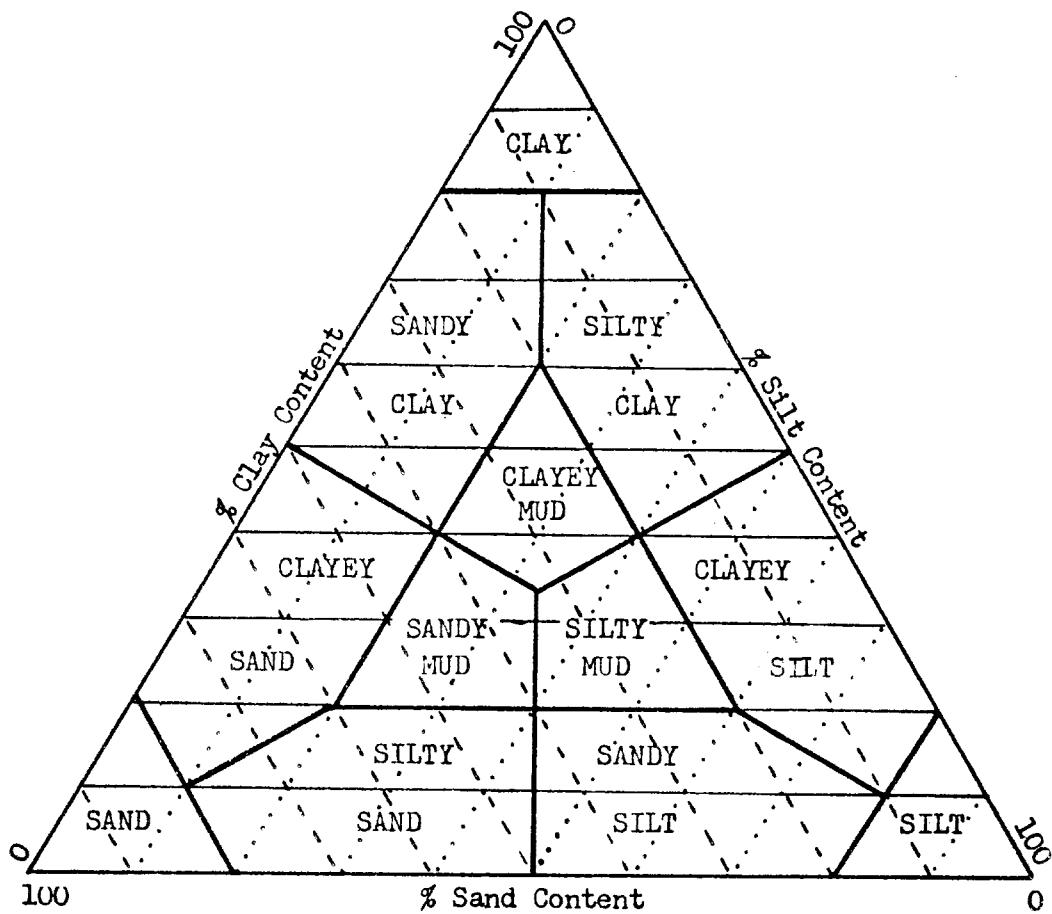


FIGURE B-1. MODIFIED NOMENCLATURE OF SEDIMENT TYPES
(after Shepard, 1954, p. 157)

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**EXPLANATION OF DATA PAGES
CORE ANALYSIS SUMMARY SHEET
Engineering Properties
NAVOCEANO (EXP) 3167/18B (Rev. 1-63)**

Results of engineering properties, core analysis performed by the U. S. Naval Oceanographic Office Geological Laboratory are recorded on Core Analysis Summary Sheet Engineering Properties.

The following is a description of the terms employed on the Core Analysis Summary Sheet:

1. Cruise Number. A number assigned to each cruise for identification purposes.
2. Latitude. Expressed in degrees, minutes, and seconds.
3. Longitude. Expressed in degrees, minutes, and seconds.
4. Sample Number. A consecutive number, commencing with 1, applied to each core taken successively throughout the cruise.
5. Date Taken. Day (GMT), month, and year.
6. Water Depth (m). The uncorrected sonic sounding recorded in meters.
7. Type Corer. Identified by the name of device employed.
8. Core Length(cm). Recorded in centimeters as observed in the laboratory.
9. Core Penetration (cm). Recorded in centimeters as observed in the field.
10. Subsample Depth in Core (cm). Interval of subsample as measured in centimeters from the top of the core.
11. Wet Unit Weight (g/cm³). The weight (solids plus water) per unit volume of the sediment mass.
12. Specific Gravity of Solids. The ratio of weight in air of a given volume of a sediment at 20°C to the weight in air of an equal volume of distilled water at 20°C.
13. Water Content (% dry weight). The ratio, in percent, of the weight of water in a given mass of the sediment sample to the weight of the solid particles.

14. Void Ratio. The ratio of the volume of void spaces to the volume of solid particles in the sediment sample as computed from Wet Unit Weight, Specific Gravity of Solids, and Water Content.

15. Saturated Void Ratio. The Void Ratio at 100 percent saturation as computed from Water Content and Specific Gravity of Solids.

$$\text{Saturated Void Ratio} = \frac{\text{Water Content} \times \text{Specific Gravity of Solids}}{100}$$

16. Porosity (%). The ratio, usually expressed as a percentage, of the volume of voids of a sediment mass to the total volume of the sediment mass.

17. Liquid Limit. Water Content, in percent, at which a pat of sediment cut by a groove of standard dimension will flow together for a distance of 1/2 inch under the impact of 25 blows in a standard liquid limit apparatus.

18. Plastic Limit. Water Content, in percent, at which a sediment will just begin to crumble when rolled into a thread approximately 1/8 inch in diameter.

19. Plasticity Index. The numerical difference between the Liquid Limit and Plastic Limit of the sediment mass.

20. Liquidity Index. The ratio, expressed in percentage, of (1) the natural water content of the sediment sample minus its Plastic Limit to (2) its Plasticity Index.

21. Compression Index. The slope of the linear portion of the Pressure-Void Ratio curve on a semi-log plot.

22. Compressive Strength. The load per unit area required to shear an unconfined, natural or remolded, sediment mass.

23. Cohesion. The shearing strength per unit area under zero externally applied load.

24. Sensitivity. The ratio of the natural to the remolded strength. It is a measure of the loss of strength due to remolding the sediment mass.

25. Angle of Internal Friction ($^{\circ}$). The angle between the abscissa and the tangent of the curve representing the relationship of "shearing resistance" to "normal stress" acting within a sediment mass.

26. Activity. The ratio of the Plasticity Index to the clay fraction percentage (.002 mm) of the sediment mass.

27. Modulus of Elasticity. The ratio of stress to strain of the sediment mass.

28. Slump (%). The ratio, in percent, of the amount of height change immediately before the compressive strength test to the original height of a cylinder of sediment.

CORE LOCATIONS

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**CORE ANALYSIS SUMMARY SHEET
SEDIMENT SIZE AND COMPOSITION**

ANALYZED BY Hill, D.S.DATE April 65**121-51**

NOVOCANO-EP-3167/16-A Rev. 1-63

1. CRUISE NO. R-006	237	4. SAMPLE NO. BSI	7. TYPE CORER Kullenberg
2. LATITUDE 36° 31'	" N	5. DATE TAKEN (DAY, MO., YR.) 31 Jan 64	8. CORE LENGTH (cm) 93
3. LONGITUDE 171° 15'	" W	6. WATER DEPTH (m) 333	9. CORER PENETRATION (cm)
10. LABORATORY NUMBER	227-39	227-39	227-39
11. SUBSAMPLE DEPTH IN CORE (cm)	0-10	10-17	75-82
12. COLOR (SSA ROCK COLOR CHART) [E] FIELD [L]AB DETERMINATION	5Y 2/1	5Y 3/2	5Y 3/2
13. ODOR			
14. SIZE & COMPOSITION ANALYSIS			
a. > 4 mm (%)			
b. .4 to .2 mm (%)			
c. .2 to .1 mm (%)	TRACE	TRACE	TRACE
d. .1 to .500 mm (%)	TRACE	TRACE	TRACE
e. .500 to .250 mm (%)	1	1	1
f. .250 to .125 mm (%)	5	4	3
g. .125 to .062 mm (%)	66	63	28
h. .062 to .031 mm (%)			20
i. .031 to .016 mm (%)	15	14	23
j. .016 to .008 mm (%)			5
k. .008 to .004 mm (%)	6	8	18
l. .004 to .002 mm (%)			10
m. .002 to .001 mm (%)	5	6	7
n. < .001 mm (%)	2	4	7
o. Median Diameter (mm)	0.0759	0.0723	0.0205
p. Sorting Coefficient	1.41	1.69	5.16
q. Skewness	0.77	0.54	0.42
r. Standard Deviation (mm)			
s. Sediment Type	Sil/Sand	Sil/Sand	Sil/Sand
t. Dominant Minerals (%)			
u. Secondary Minerals (%)			
v. Calcium Carbonate (%)	5	4	3
w. Organic Carbon (%)	1.20	1.66	1.66
15. REMARKS	green sand particles throughout core		

**CORE ANALYSIS SUMMARY SHEET
SEDIMENT SIZE AND COMPOSITION**

MGG 0905019
ANALYZED BY A.H. D.S.

121-41

DATE April 65

NAVOCANO-EXP-318/78-A (Rev. 1-63)

1. CRUISE NO.		2. LATITUDE $34^{\circ} 0' 31''$		3. LONGITUDE $121^{\circ} 0' 32''$		4. SAMPLE NO. 227		5. DATE TAKEN (DAY, MO., YR.) 22 Jan 64		6. WATER DEPTH (m) 2195		7. TYPE CORER Kullenberg		8. CORE LENGTH (cm) 7.3		9. CORER PENETRATION (cm)		
10. LABORATORY NUMBER	22722	22723	227-24	227-25	227-26													
11. SUBSAMPLE DEPTH IN CORE (cm)	0-10	10-17	30-37	50-57	68-73													
12. COLOR (GSA ROCK COLOR CHART) <input checked="" type="checkbox"/> FIELD <input type="checkbox"/> LAB DETERMINATION	5 1/2 F	5 1/2 F	5 1/2 F	5 1/2 F	5 1/2 F													
13. ODOR																		
14. SIZE & COMPOSITION ANALYSIS																		
a. ≥ 4 mm (%)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
b. .4 to 2 mm (%)	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE
c. .2 to 1 mm (%)	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
d. .1 to .500 mm (%)	26	18	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
e. .500 to .250 mm (%)	15	14	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
f. .250 to .125 mm (%)	21	16	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
g. .125 to .062 mm (%)	11	15	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
h. .062 to .031 mm (%)	9	11	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
i. .031 to .016 mm (%)	11	15	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
j. .016 to .008 mm (%)	9	11	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
k. .008 to .004 mm (%)	9	11	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
l. .004 to .002 mm (%)	11	15	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
m. .002 to .001 mm (%)	8	12	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
n. $< .001$ mm (%)	8	13	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
o. Median Diameter (mm)	0.1022	0.0600	0.250	0.0304	0.0208													
p. Sorting Coefficient	4.10	5.77	7.77	5.22	7.85													
q. Skewness	0.40	0.15	0.43	0.89	0.89													
r. Standard Deviation (mm)																		
s. Sediment Type	Sil Sand	Sand Mud	Sand M.	Sil Mud	Sand Mud													
t. Dominant Minerals (%)																		
u. Secondary Minerals (%)																		
v. Calcium Carbonate (%)	3	5	7	9	11													
w. Organic Carbon (%)	1.23	1.23	1.23	1.23	1.23													
x. Remarks																		

Shell Fragments Throughout core

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MGG 09005019

CORE ANALYSIS SUMMARY SHEET
SEDIMENT SIZE AND COMPOSITION

ANALYZED BY
HILL, D. S.

NAVOCLEANO-F18-A (Rev. 1-63)

1. CRUISE NO. R-006 227 4. SAMPLE NO. BS-4 7. TYPE CORER
 2. LATITUDE 34° 53' " N 5. DATE TAKEN (DAY, MO., YR.) 123 Jan 64 6. CORE LENGTH (cm) 68
 3. DEPTH 1000 M 6. DEPTH (m) 1000

The graph plots '9. CORER PENETRATION (cm)' on the y-axis (0 to 100) against '6. WATER DEPTH (m) 5 50' on the x-axis (0 to 100). Two series are shown: Core 227-16 (solid squares) and Core 227-17 (open squares). Both cores show a sharp increase in penetration at approximately 50 meters depth.

Water Depth (m)	Core Penetration (cm) - 227-16	Core Penetration (cm) - 227-17
0-10	0	0
10-17	0	0
17-33	0	0
33-39	0	0
39-61	0	0
61-68	0	0
68-71	0	0
71-74	0	0
74-76	0	0
76-81	0	0
81-84	0	0
84-87	0	0
87-90	0	0
90-93	0	0
93-96	0	0
96-99	0	0
99-100	0	0
100-103	0	0
103-106	0	0
106-110	0	0
110-113	0	0
113-116	0	0
116-119	0	0
119-122	0	0
122-125	0	0
125-128	0	0
128-131	0	0
131-134	0	0
134-137	0	0
137-140	0	0
140-143	0	0
143-146	0	0
146-149	0	0
149-152	0	0
152-155	0	0
155-158	0	0
158-161	0	0
161-164	0	0
164-167	0	0
167-170	0	0
170-173	0	0
173-176	0	0
176-179	0	0
179-182	0	0
182-185	0	0
185-188	0	0
188-191	0	0
191-194	0	0
194-197	0	0
197-200	0	0
200-203	0	0
203-206	0	0
206-209	0	0
209-212	0	0
212-215	0	0
215-218	0	0
218-221	0	0
221-224	0	0
224-227	0	0
227-230	0	0
230-233	0	0
233-236	0	0
236-239	0	0
239-242	0	0
242-245	0	0
245-248	0	0
248-251	0	0
251-254	0	0
254-257	0	0
257-260	0	0
260-263	0	0
263-266	0	0
266-269	0	0
269-272	0	0
272-275	0	0
275-278	0	0
278-281	0	0
281-284	0	0
284-287	0	0
287-290	0	0
290-293	0	0
293-296	0	0
296-299	0	0
299-302	0	0
302-305	0	0
305-308	0	0
308-311	0	0
311-314	0	0
314-317	0	0
317-320	0	0
320-323	0	0
323-326	0	0
326-329	0	0
329-332	0	0
332-335	0	0
335-338	0	0
338-341	0	0
341-344	0	0
344-347	0	0
347-350	0	0

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15. REMARKS

**CORE ANALYSIS SUMMARY SHEET
SEDIMENT SIZE AND COMPOSITION**

MGG09005019

ANALYZED BY Hill, D.S.

DATE April 65

121-50

NAVOCANO-EXP-3167/1B-A (Rev. 1-63)

1. CRUISE NO. <u>R-006</u>	237	14. SAMPLE NO. <u>B5-5</u>	5. DATE TAKEN (DAY, MO., YR.) <u>23 JAN 64</u>	6. WATER DEPTH (m) <u>133</u>	7. TYPE CORER	<u>Kullenberg</u>
2. LATITUDE <u>35° 08'</u>	" N				8. CORE LENGTH (cm)	<u>87</u>
3. LONGITUDE <u>120° 42'</u>	" W				9. CORER PENETRATION (cm)	
10. LABORATORY NUMBER	<u>227-90227-49227-50</u>					
11. SUBSAMPLE DEPTH IN CORE (cm)	<u>0-10</u>	<u>10-17</u>	<u>160-51</u>	<u>77-87</u>		
12. COLOR (GSA ROCK COLOR CHART) <input checked="" type="checkbox"/> FIELD <input type="checkbox"/> LAB DETERMINATION	<u>5Y2/1</u>	<u>5Y2/1</u>	<u>5Y2/1</u>	<u>F</u>		
13. ODOR						
14. SIZE & COMPOSITION ANALYSIS						
a. $>$ 4 mm (%)						
b. .4 to .2 mm (%)						
c. .2 to .1 mm (%)						
d. .1 to .050 mm (%)						
e. .050 to .025 mm (%)						
f. .025 to .0125 mm (%)						
g. .0125 to .0062 mm (%)	<u>9</u>	<u>6</u>	<u>8</u>	<u>2</u>		
h. .0062 to .0031 mm (%)						
i. .031 to .016 mm (%)	<u>47</u>	<u>36</u>	<u>39</u>	<u>39</u>		
j. .016 to .008 mm (%)						
k. .008 to .004 mm (%)	<u>16</u>	<u>22</u>	<u>18</u>	<u>22</u>		
l. .004 to .002 mm (%)						
m. .002 to .001 mm (%)	<u>10</u>	<u>16</u>	<u>11</u>	<u>13</u>		
n. $<$.001 mm (%)	<u>16</u>	<u>20</u>	<u>24</u>	<u>24</u>		
o. Median Diameter (mm)	<u>0.0192</u>	<u>0.0102</u>	<u>0.0135</u>	<u>0.0089</u>		
p. Sorting Coefficient	<u>3.09</u>	<u>3.89</u>	<u>5.15</u>	<u>4.70</u>		
q. Skewness	<u>0.39</u>	<u>0.42</u>	<u>0.21</u>	<u>0.28</u>		
r. Standard Deviation (mm)						
s. Sediment Type	<u>Cl Silt</u>	<u>Cl Silt</u>	<u>Cl Silt</u>	<u>Cl Silt</u>		
t. Dominant Minerals (%)						
u. Secondary Minerals (%)						
v. Calcium Carbonate (%)	<u>8</u>	<u>8</u>	<u>7</u>	<u>8</u>		
w. Organic Carbon (%)	<u>1.23</u>			<u>0.86</u>		
15. REMARKS	<i>Shell fragments throughout core 75-87 - core is more compacted, muddy</i>					

CORE ANALYSIS SUMMARY SHEET
SEDIMENT SIZE AND COMPOSITION

MCGO 9005019

ANALYZED BY Hill, D.S.

NAVOCEANO-EXP-3107/18-A (Rev. 1-63)

1. CRUISE NO.	R-006	227	4. SAMPLE NO.	BS-6
2. LATITUDE	34° 32'	" N	5. DATE TAKEN (DAY, MO., YR.)	23 Jan 64
3. LONGITUDE	120° 43'	" W	6. WATER DEPTH (m)	102
10. LABORATORY NUMBER	227-83	227-84	7. TYPE CORER	Kullenberg
11. SUBSAMPLE DEPTH IN CORE (cm)	0-10	10-17	8. CORE LENGTH (cm)	85
12. COLOR (IGSA ROCK COLOR CHART) [F] FIELD [L] LAB DETERMINATION	5Y2/1	5Y2/1	9. CORER PENETRATION (cm)	
13. OODR	F	F		
14. SIZE & COMPOSITION ANALYSIS				
a.	> 4 mm (%)			
b.	.4 to 2 mm (%)			
c.	.2 to 1 mm (%)	TRACE	TRACE	
d.	.1 to .500 mm (%)	TRACE	TRACE	
e.	.00 to .250 mm (%)	1	1	TRACE
f.	.250 to .125 mm (%)	1	1	1
g.	.125 to .062 mm (%)	25	20	3
h.	.062 to .031 mm (%)			5
i.	.031 to .016 mm (%)	44	33	54
j.	.016 to .008 mm (%)			
k.	.008 to .004 mm (%)	13	13	26
l.	.004 to .002 mm (%)			15
m.	.002 to .001 mm (%)	8	13	16
n.	< .001 mm (%)	8	9	20
o. Median Diameter (mm)	0.0296	0.0249	0.0079	0.0183
p. Sorting Coefficient	2.49	3.00	3.86	2.83
q. Skewness	0.74	0.52	0.54	0.36
r. Standard Deviation (mm)				
s. Sediment Type	Sand	Silt	Silts	Sand/Cl Silt
t. Dominant Minerals (%)				
u. Secondary Minerals (%)				
v. Calcium Carbonate (%)	4	6	9	7
w. Organic Carbon (%)	1.10			1.19
15. REMARKS	Shell Fragments Throughout Core			

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CORE ANALYSIS SUMMARY SHEET
SEDIMENT SIZE AND COMPOSITION

NAVOCEANO-EXP-3167/18-A (Rev. 1-63)

ANALYZED BY Hill, D.S.DATE April 65

121-#II

1. CRUISE NO.	R-006	827	4. SAMPLE NO.	B5-7
2. LATITUDE	34° 0' 25"	" N	5. DATE TAKEN (DAY, MO., YR.)	23 Jan 64
3. LONGITUDE	120° 56'	" W	6. WATER DEPTH (m)	896

7. TYPE CORER

Kullenberg

8. CORE LENGTH (cm)

90

9. CORER PENETRATION (cm)

10. LABORATORY NUMBER	277-10	277-11	277-12	277-13
11. SUBSAMPLE DEPTH IN CORE (cm)	0-10	24-31	61-69	85-90
12. COLOR (GSA ROCK COLOR CHART)	[F] FIELD [L] LAB DETERMINATION			
13. ODOR				

14. SIZE & COMPOSITION ANALYSIS

a. > 4 mm (%)				
b. 4 to 2 mm (%)				
c. 2 to 1 mm (%)				
d. 1 to .500 mm (%)				
e. .500 to .250 mm (%)				
f. .250 to .125 mm (%)				
g. .125 to .062 mm (%)	5	5	4	3
h. .062 to .031 mm (%)				
i. .031 to .016 mm (%)	30	33	29	14
j. .016 to .008 mm (%)				
k. .008 to .004 mm (%)	12	15	19	17
l. .004 to .002 mm (%)				
m. .002 to .001 mm (%)	16	17	18	15
n. < .001 mm (%)	37	30	30	51
o. Median Diameter (mm)	0.00279	0.0050	0.0043	0.0010
p. Sorting Coefficient	8.48	7.93	6.31	—
q. Skewness	0.77	0.35	0.53	—
r. Standard Deviation (mm)				
s. Sediment Type	Silicic Silt Clay Sil Clay			
t. Dominant Minerals (%)				
u. Secondary Minerals (%)				
v. Calcium Carbonate (%)	11	5	10	16
w. Organic Carbon (%)	3.39		2.38	
x. Remarks				

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CORE ANALYSIS SUMMARY SHEET

SEDIMENT SIZE AND COMPOSITION

ANALYZED BY Hill, D.S.DATE April 65

121-51

NAVOCEANO-EXP-3167/1B-A (Rev. 1-63)

1. CRUISE NO. R-006	227	4. SAMPLE NO. B5-9	7. TYPE CORER Kullenberg
2. LATITUDE 33° 49'	" N	5. DATE TAKEN (DAY, MO., YR.) 24 Jan 64	8. CORE LENGTH (cm) 112.5
3. LONGITUDE 121° 32'	" W	6. WATER DEPTH (m) 3365	9. CORE PENETRATION (cm)
10. LABORATORY NUMBER	227-73	227-74	227-76
11. SUBSAMPLE DEPTH IN CORE (cm)	0-.70	10-.17	10-.17
12. COLOR (GSA ROCK COLOR CHART) <input checked="" type="checkbox"/> FIELD <input type="checkbox"/> LAB DETERMINATION	5Y3/2 F	5Y3/2 F	5Y3/2 F
13. ODRN			
14. SIZE & COMPOSITION ANALYSIS			
a. > 4 mm (%)	2	5	5
b. .4 to .2 mm (%)			
c. .2 to .1 mm (%)			
d. .1 to .050 mm (%)			
e. .500 to .250 mm (%)		TRACE	TRACE
f. .250 to .125 mm (%)			
g. .125 to .062 mm (%)	2		
h. .062 to .031 mm (%)			
i. .031 to .016 mm (%)	18	13	33
j. .016 to .008 mm (%)			
k. .008 to .004 mm (%)	16	12	12
l. .004 to .002 mm (%)			
m. .002 to .001 mm (%)	28	22	16
n. < .001 mm (%)	36	48	35
o. Median Diameter (mm)	0.0019	0.0036	0.0178
p. Sorting Coefficient	4.85	3.46	2.67
q. Skewness	1.04	2.48	0.73
r. Standard Deviation (mm)			
s. Sediment Type	Sil Clay Sil Clay Sil Clay Sil Mud		
t. Dominant Minerals (%)			
u. Secondary Minerals (%)			
v. Calcium Carbonate (%)	12	16	8
w. Organic Carbon (%)	2.38		1.11
15. REMARKS	Shell Fragments Throughout Core 117.5 - Sand layer		
	80-82 - sand layer		
	96-97 - "		

**CORE ANALYSIS SUMMARY SHEET
SEDIMENT SIZE AND COMPOSITION**

MCG 09005019

ANALYZED BY Hill, D.S.

DATE April 65

121-37

NAVOCANO-EXP-3167/78-A (Rev. 1-63)

1. CRUISE NO.	R-006	227	4. SAMPLE NO.	BS -10	7. TYPE CORER	Kullenberg
2. LATITUDE	33° 48'	n N	5. DATE TAKEN (DAY, MO., YR.)	24 Jan 64	6. CORE LENGTH (cm)	28
3. LONGITUDE	170° 43'	w W	6. WATER DEPTH (m)	1829	9. CORE PENETRATION (cm)	
10. LABORATORY NUMBER	227-27					
11. SUBSAMPLE DEPTH IN CORE (cm)	10-17					
12. COLOR (GSA ROCK COLOR CHART) <input checked="" type="checkbox"/> FIELD <input type="checkbox"/> LAB DETERMINATION	5Y2/1					
13. ODOR	F					
14. SIZE & COMPOSITION ANALYSIS						
a. > 4 mm (s)						
b. .4 to 2 mm (s)	1					
c. .2 to 1 mm (s)	1					
d. .1 to .500 mm (s)	8					
e. .500 to .250 mm (s)	31					
f. .250 to .125 mm (s)	20					
g. .125 to .062 mm (s)	17					
h. .062 to .031 mm (s)						
i. .031 to .016 mm (s)	7					
j. .016 to .008 mm (s)						
k. .008 to .004 mm (s)	6					
l. .004 to .002 mm (s)						
m. .002 to .001 mm (s)	7					
n. < .001 mm (s)	2					
o. Median Diameter (mm)	0.1869					
p. Sorting Coefficient	2.15					
q. Skewness	0.71					
r. Standard Deviation (mm)						
s. Sediment Type	SilSand					
t. Dominant Minerals (s)						
u. Secondary Minerals (s)						
v. Calcium Carbonate (s)	'Y'					
w. Organic Carbon (s)	7.18					
x. REMARKS						

MCGO 9005019

CORE ANALYSIS SUMMARY SHEET

SEDIMENT SIZE AND COMPOSITION

ANALYZED BY Hill, D.S.

NAVOCEANO-ESP-316778-A (Rev. 1-63)

131-#II

DATE April 65

1. CRUISE NO.	2. LATITUDE	3. LONGITUDE	4. SAMPLE NO.	5. DATE TAKEN (DAY, MO., YR.)	6. WATER DEPTH (m)	7. TYPE CORER	8. CORE LENGTH (cm)	9. CORE PENETRATION (cm)
R-006	34° 15'	"	N	125 Jan 64	5.30			
	09° 09'	"	W					
10. LABORATORY NUMBER	227-18	227-19	227-20	227-21				
11. SUBSAMPLE DEPTH IN CORE (cm)	0-10	10-17	15-22	25-40				
12. COLOR (GSA ROCK COLOR CHART) [] FIELD [] LAB DETERMINATION	5Y3/2 F	5Y3/2 F	5Y3/2 F	5Y3/2 F				
13. ODOR								
14. SIZE & COMPOSITION ANALYSIS								
a. > 4 mm (%)	12					x		
b. 4 to 2 mm (%)	5							
c. 2 to 1 mm (%)	1							
d. 1 to .500 mm (%)	1					TRACE	TRACE	
e. .500 to .250 mm (%)	1							
f. .250 to .125 mm (%)	1							
g. .125 to .062 mm (%)	7							
h. .062 to .031 mm (%)								
i. .031 to .016 mm (%)	10	4	3	4				
j. .016 to .008 mm (%)								
k. .008 to .004 mm (%)	16	22	21	16				
l. .004 to .002 mm (%)								
m. .002 to .001 mm (%)	20	37	42	41				
n. < .001 mm (%)	26	37	34	39				
o. Median Diameter (mm)	0.0056	0.0017	0.0017	0.0017				
p. Sorting Coefficient	9.41	4.58	2.33	2.61				
q. Skewness	2.29	0.29	0.92	0.87				
r. Standard Deviation (mm)								
s. Sediment Type	C1	Mud	Sil	Clay	Silt	Clay		
t. Dominant Minerals (%)								
u. Secondary Minerals (%)								
v. Calcium Carbonate (%)	19	23	19	22				
w. Organic Carbon (%)	2.16			2.19				
15. REMARKS								
X	1 Rock (NOT included in Total wt) 0.709 [5x7x3 mm]							
X	1 Rock — Shells — very fine fibers throughout core when examined by a microscope							

0-10cm — shells — very fine fibers throughout core when examined by a microscope

**CORE ANALYSIS SUMMARY SHEET
SEDIMENT SIZE AND COMPOSITION**

MGG 09005019

ANALYZED BY Hill, D.S.
DATE April 65

1. CRUISE NO.	R-006	227	4. SAMPLE NO.	BS-12	7. TYPE CORER	Kullenberg
2. LATITUDE	34° 09'	" N	5. DATE TAKEN (DAY, MO., YR.)	26 Jan 64	8. CORE LENGTH (cm)	26
3. LONGITUDE	120° 18'	" W	6. WATER DEPTH (m)	366	9. CORER PENETRATION (cm)	
10. LABORATORY NUMBER	227-28					
11. SUBSAMPLE DEPTH IN CORE (cm)	10-17					
12. COLOR (GSA ROCK COLOR CHART) <input checked="" type="checkbox"/> FIELD <input type="checkbox"/> LAB DETERMINATION	5Y2/1					
13. ODOR	F					
14. SIZE & COMPOSITION ANALYSIS						
a.	> 4	(mm) 15				
b.	.4 to 2	mm 15	TRACE			
c.	.2 to 1	mm 15	TRACE			
d.	.1 to .500	mm 15	/			
e.	.500 to .250	mm 15	12			
f.	.250 to .125	mm 15	10			
g.	.125 to .062	mm 15	21			
h.	.062 to .031	mm 15				
i.	.031 to .016	mm 15	18			
j.	.016 to .008	mm 15				
k.	.008 to .004	mm 15	14			
l.	.004 to .002	mm 15				
m.	.002 to .001	mm 15	10			
n.	< .001	mm 15	14			
o.	Median Diameter (mm)		0.0359			
p.	Sorting Coefficient		5.32			
q.	Skewness		0.33			
r.	Standard Deviation (mm)					
s.	Sediment Type		Sand Mud			
t.	Dominant Minerals (s)					
u.	Secondary Minerals (s)					
v.	Calcium Carbonate (%)		10			
w.	Organic Carbon (%)		1.58			
x.	REMARKS					

Shell Fragments Throughout

MCGO 9005019

CORE ANALYSIS SUMMARY SHEET
SEDIMENT SIZE AND COMPOSITIONANALYZED BY Hill, D.S.DATE April 65

120-49

NOVOCOANO-EXP-3167/1B (Rev. 1-63)

1. CRUISE NO. <u>R-006</u>	227	4. SAMPLE NO. <u>BS-13</u>	7. TYPE CORER <u>Kullenberg</u>
2. LATITUDE <u>34° 25'</u>	"	5. DATE TAKEN (DAY, MO., YR.) <u>26 Jan 64</u>	8. CORE LENGTH (cm) <u>78</u>
3. LONGITUDE <u>119° 59'</u>	"	6. WATER DEPTH (m) <u>366</u>	9. CORER PENETRATION (cm)
10. LABORATORY NUMBER	<u>227-51</u>	227-52	227-53
11. SUBSAMPLE DEPTH IN CORE (cm)	<u>0-10</u>	<u>10-17</u>	<u>60-67</u>
12. COLOR (GSA ROCK COLOR CHART) <input checked="" type="checkbox"/> FIELD <input type="checkbox"/> LAB DETERMINATION	<u>5Y2/1</u>	<u>5Y2/1</u>	<u>5Y2/1</u>
13. ODOR	<u>F</u>	<u>F</u>	<u>E</u>
14. SIZE & COMPOSITION ANALYSIS			
a. \rightarrow	<u>4</u>	(mm) <u>(#)</u>	
b. .4	to .2	mm <u>(#)</u>	
c. .2	to 1	mm <u>(#)</u>	TRACE
d. .1	to .500	mm <u>(#)</u>	TRACE /
e. .500	to .250	mm <u>(#)</u>	/
f. .250	to .125	mm <u>(#)</u>	TRACE
g. .125	to .062	mm <u>(#)</u>	TRACE
h. .062	to .031	mm <u>(#)</u>	
i. .031	to .016	mm <u>(#)</u>	
j. .016	to .008	mm <u>(#)</u>	
k. .008	to .004	mm <u>(#)</u>	
l. .004	to .002	mm <u>(#)</u>	
m. .002	to .001	mm <u>(#)</u>	
n. < .001	mm <u>(#)</u>		
o. Median Diameter (mm)	<u>0.0026</u>	<u>0.0044</u>	<u>0.0025</u>
p. Sorting Coefficient	<u>4.12</u>	<u>3.91</u>	<u>5.43</u>
q. Skewness	<u>0.91</u>	<u>0.64</u>	<u>0.76</u>
r. Standard Deviation (mm)			
s. Sediment Type	<u>Sil Clay</u>	<u>C Silt</u>	<u>Sil Clay</u>
t. Dominant Minerals (fs)			
u. Secondary Minerals (fs)			
v. Calcium Carbonate (%)	<u>13</u>	<u>13</u>	<u>15</u>
w. Organic Carbon (%)	<u>2.43</u>	<u>2.02</u>	
15. REMARKS	<u>52-78 - Brownish silty gray clay stratum (5yr 4/1)</u>		

**CORE ANALYSIS SUMMARY SHEET
SEDIMENT SIZE AND COMPOSITION**

MGG 09005019
ANALYZED BY Hill, D.S.

DATE April 16, 1965

NAVOCEANO-EXP-3167/18-A (Rev. 1-63)

121-30

1. CRUISE NO.	R-006	227	4. SAMPLE NO.	85-15	7. TYPE CORER	Kullenberg
2. LATITUDE	33° 26'	N	5. DATE TAKEN (DAY, MO., YR.)	18 Jan 64	6. CORE LENGTH (cm)	85
3. LONGITUDE	120° 11'	W	6. WATER DEPTH (m)	1134	9. CORER PENETRATION (cm)	
10. LABORATORY NUMBER	222-29	222-30	222-31	222-32		
11. SUBSAMPLE DEPTH IN CORE (cm)	0-10	10-17	17-27	27-35		
12. COLOR (GSA ROCK COLOR CHART) [F] FIELD [L] LAB DETERMINATION	5 1/2 F	5 1/2 L	5 1/2 F	5 1/2 F		
13. ODOR						
14. SIZE & COMPOSITION ANALYSIS						
a. > 4 mm (s)						
b. 4 to 2 mm (s)						
c. 2 to 1 mm (s)						
d. 1 to .500 mm (s)			TRACE	TRACE		
e. .500 to .250 mm (s)			TRACE	TRACE		
f. .250 to .125 mm (s)			TRACE	TRACE		
g. .125 to .062 mm (s)					2	3
h. .062 to .031 mm (s)						
i. .031 to .016 mm (s)		17	11	7	14	
j. .016 to .008 mm (s)						
k. .008 to .004 mm (s)	3.3	2.0	1.3	2.0		
l. .004 to .002 mm (s)						
m. .002 to .001 mm (s)	.31	.31	.39	.35		
n. < .001 mm (s)	.19	.38	.39	.28		
o. Median Diameter (mm)	0.0046	0.0017	0.0015	0.0024		
p. Sorting Coefficient	2.80	3.11	2.45	3.04		
q. Skewness	0.96	1.20	0.94	1.30		
r. Standard Deviation (mm)						
s. Sediment Type	Silt Clay Silty Clay					
t. Dominant Minerals	(s)					
u. Secondary Minerals	(s)					
v. Calcium Carbonate	(s)	4.2	4.3	4.6		
w. Organic Carbon	(s)	3.88			6.10	
x. REMARKS						

**CORE ANALYSIS SUMMARY SHEET
SEDIMENT SIZE AND COMPOSITION**

MUG 0,90,050 1.9
ANALYZED BY

NAVOCEANO-DFP-310718-A Rev. 1-63)

121-41

DATE April 1, '68

1. CRUISE NO.	R-006	227	4. SAMPLE NO.	85-16	7. TYPE CORER	Kullenberg
2. LATITUDE	34° 55'	" N	5. DATE TAKEN (DAY, MO., YR.)	9 Jan 64	8. CORE LENGTH (cm)	137
3. LONGITUDE	121° 51'	" W	6. WATER DEPTH (m)	29.26	9. CORER PENETRATION (cm)	
10. LABORATORY NUMBER	227-78	227-79	227-80	227-81		
11. SUBSAMPLE DEPTH IN CORE (cm)	0-10	25-32	60-71	100-117		
12. COLOR (GSA ROCK COLOR CHART) <input checked="" type="checkbox"/> FIELD <input type="checkbox"/> LAB DETERMINATION	5Y 3/2 F	5Y 3/2 F	5Y 3/2 F	5Y 3/2 F		
13. ODOR						
14. SIZE & COMPOSITION ANALYSIS						
a. > 4 mm (s)						
b. 4 to 2 mm (s)						
c. 2 to 1 mm (s)						
d. 1 to .500 mm (s)	TRACE	TRACE	TRACE	TRACE		
e. .500 to .250 mm (s)						
f. .250 to .125 mm (s)						
g. .125 to .062 mm (s)						
h. .062 to .031 mm (s)						
i. .031 to .016 mm (s)	27	4	12	11	15	
j. .016 to .008 mm (s)						
k. .008 to .004 mm (s)	22	10	14	15	13	
l. .004 to .002 mm (s)						
m. .002 to .001 mm (s)	18	28	24	23	20	
n. < .001 mm (s)	3.3	5.8	5.0	5.1	5.3	
o. Median Diameter (mm)	0.0034	0.0007	0.0010	0.0009	0.0009	
p. Sorting Coefficient	5.8	—	—	—	—	
q. Skewness	0.84	—	—	—	—	
r. Standard Deviation (mm)						
s. Sediment Type	SilClay	SilClay	SilClay	SilClay	SilClay	
t. Dominant Minerals (s)						
u. Secondary Minerals (s)						
v. Calcium Carbonate (%)	9	22	6	11	10	
w. Organic Carbon (%)	2.35				3.01	
15. REMARKS	124-125 - color (106 4/2)					

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CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES

MGG 09005019

NAVOCANO-EXP-3167/18-8 (10-62)

ANALYZED BY Cooper, Rohrbach DATE 31 July 1964

121-51

1. CRUISE NO. B-006	227	4. SAMPLE NO.	B.S. 1	7. TYPE CORE	1. Illerberg
2. LATITUDE	35° 31' N	5. DATE TAKEN (Day, month, year)	31 Jan 64	8. CORE LENGTH (cm)	93
3. LONGITUDE	121° 05' W	6. WATER DEPTH (m)	33.3; 182.0(m)	9. CORER PENETRATION (cm)	
10. SUBSAMPLE DEPTH IN CORE (cm)	0-10	10-17	17-30	30-45	45-60
11. WET UNIT WEIGHT (g/cm ³)		1.78			1.63
12. SPECIFIC GRAVITY OF SOLIDS		2.64			
13. WATER CONTENT (% dry weight)	38.7	44.3	54.4	65.7	73.8
14. VOID RATIO		1.21			
15. SATURATED VOID RATIO		1.17			
16. POROSITY (%)		54.8			
17. LIQUID LIMIT					
18. PLASTIC LIMIT					
19. PLASTICITY INDEX					
20. LIQUIDITY INDEX					
21. COMPRESSION INDEX FROM LL					
22. COMPRESSIVE STRENGTH NATURAL	(g/cm ²)				
	REHOLD	(g/cm ²)			
23. COHESION	NATURAL	(g/cm ²)	47.1	66.8	
	REHOLD	(g/cm ²)	26.7	26.7	
24. SENSITIVITY		2		3	
25. ANGLE OF INTERNAL FRICTION (°)					
26. ACTIVITY					
27. MODULUS OF ELASTICITY					
28. SLUMP (in)					
29. REMARKS	11.5 odor in core.				

**CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES**

MGG 09005019

NAYOCEANO-EXP-3167/18-8 (10-62)

121 - 51

ANALYZED BY Oseeq, Rohrhisch date 1 Aug 1964

1. CRUISE NO.	10	11. B. S.	227	12. TYPE CORE	Kullenberg
2. LATITUDE	35° 16' N.	13. DATE TAKEN (Date, Month, Year)	21 Jan 64	14. CORE LENGTH (cm)	93
3. LONGITUDE	121° 33' W.	15. FAIR DEPTH (m)	795	16. FAIR DEPTH (fm)	425(fm)
10. SUBSAMPLE DEPTH IN CORE (cm)	5-10	17. 30-45	45-60	17. CORE PENETRATION (cm)	
11. WET UNIT WEIGHT (g/cm^3)		10-17	17-30	60-67	
12. SPECIFIC GRAVITY OF SOLIDS		1.78		67-80	
13. WATER CONTENT (%) dry weight)		2.85		80-93	
14. VOID RATIO				Bottom	
15. SATURATED VOID RATIO		44.1	44.0		
16. POROSITY (%)		50.3	48.7		
17. LIQUID LIMIT		51.0	64.0		
18. PLASTIC LIMIT		49.3	49.3		
19. PLASTICITY INDEX		41.3			
20. LIQUIDITY INDEX					
21. COMPRESSION INDEX FROM LL					
22. COMPRESSIVE STRENGTH NATURAL	(kg/cm^2)				
	REMOULD	(kg/cm^2)			
23. COHESION	NATURAL	(kg/cm^2)	13.3*		151.2
	REMOULD	(kg/cm^2)	13.3		26.7
24. SENSITIVITY			1		6
25. ANGLE OF INTERNAL FRICTION (°)					
26. ACTIVITY					
27. MODULUS OF ELASTICITY					
28. DENSITY (kg/m³)					
29. REMARKS *	This sample may be disturbed. Sample at 60-67 cm was in a local hard layer. This layer of silt at the top.				

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CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES

M-309005019

NAVOCEANO-EXP-3167/18-B (10-621)

ANALYZED by Osser, Rohrhisch date 30 July 1964

121-41

1. CRUISE NO.	R-006	227	4. SAMPLE NO.	B.S. 3	7. TYPE CORER Kullenberg 2
2. LATITUDE	34° 31' N		5. DATE TAKEN (Date, month, year)	22 Jan 64	8. CORE LENGTH (cm) 73
3. LONGITUDE	121° 32' W		6. WATER DEPTH (m) 2195:	1200(frm)	9. CORER PENETRATION (cm)
10. SUBSAMPLE DEPTH IN CORE (cm)	0-10	10-17	17-30	30-37	37-50
11. WET UNIT WEIGHT (g/cm ³)		1.68		1.62	
12. SPECIFIC GRAVITY OF SOLIDS		2.60			
13. WATER CONTENT (% dry weight)	55.3	58.0	63.1	68.0	57.8
14. VOID RATIO		1.45			
15. SATURATED VOID RATIO		1.51			
16. POROSITY (%)		59.2			
17. LIQUID LIMIT					
18. PLASTIC LIMIT					
19. PLASTICITY INDEX					
20. LIQUIDITY INDEX					
21. COMPRESSION INDEX FROM LL					
22. COMPRESSIVE STRENGTH NATURAL (g/cm ²)					
	RENOULD	(g/cm ²)			
23. COHESION NATURAL (g/cm ²)		64.0		53.4	77.3
	RENOULD	(g/cm ²)	30.2	13.4	26.7
24. SENSITIVITY			2	4	3
25. ANGLE OF INTERNAL FRICTION (°)					
26. ACTIVITY					
27. MODULUS OF ELASTICITY					
28. SLUMP (in)					
29. REMARKS Bright yellow orange.					

CORE ANALYSIS SUMMARY SHEET ENGINEERING PROPERTIES

MCG 09005019

NAVOCEANO-EXP-3167/18-8 (10-62) :

ANALYZED by Oser, Rohrhisch DATE 29 July 1964

121-41

ANALYZED BY OUSER, ROHRHISCH DATE 29 July 1934

1. CRUISE NO.	1-106	227	4. SAMPLE NO.	B. S. 4	7. TYPE CORER Killenben
2. LATITUDE	34° 53' N :	*	5. DATE TAKEN (day, month, year)	22 Jan 64	8. CORE LENGTH (cm) 68
3. LONGITUDE	121° 38' W :	*	6. WATER DEPTH (m)	550	9. CORER PENETRATION (cm) 300 (6m)
10. SUBSAMPLE DEPTH IN CORE (cm)	0-10	10-17	17-32	32-39	39-54
11. WET UNIT WEIGHT (g/cm ³)	1.40	1.44			
12. SPECIFIC GRAVITY OF SOLIDS	2.57				
13. WATER CONTENT (% dry weight)	125.0	117.7	113.4	99.0	88.6
14. VOID RATIO	3.01				
15. SATURATED VOID RATIO	3.02				
16. POROSITY (%)	75.1				
17. LIQUID LIMIT					
18. PLASTIC LIMIT					
19. PLASTICITY INDEX					
20. LIQUIDITY INDEX					
21. COMPRESSION INDEX FROM LL					
22. COMPRESSIVE STRENGTH NATURAL (g/cm ²)	REMOULD (g/cm ²)				
23. COHESION NATURAL (g/cm ²)	REMOULD (g/cm ²)	16.9	30.2		
		13.5	9.8		
24. SENSITIVITY		1	3		
25. ANGLE OF INTERNAL FRICTION (°)					
26. ACTIVITY					
27. MODULUS OF ELASTICITY					
28. SLUMP (in)					
29. REMARKS <u>no S odor.</u>					

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CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES

MGG 09005019

NAVOCEANO-EXP-3167/18-8 (10-62)

131-50 ANALYZED BY Oser, Rohrhisch DATE 31 July 1964

1. CRUISE NO.	R-006	237	4. SAMPLE NO. R.S. 5	7. TYPE CORER Kullenberg
2. LATITUDE	35°08'N	"	5. DATE TAKEN (day, month, year)	23 Jan 64
3. LONGITUDE	120°42'W	"	6. WATER DEPTH (m)	133. 73 fm
10. SUBSAMPLE DEPTH IN CORE (cm)	0-10	10-17	17-30	30-45
11. WET UNIT WEIGHT (g/cm ³)	1.64		45-60	60-67
12. SPECIFIC GRAVITY OF SOLIDS	2.70		67-77	77-87
13. WATER CONTENT (% dry weight)	60.6	59.5	52.3	44.9
14. VOID RATIO	1.63		45.8	43.0
15. SATURATED VOID RATIO	1.61			
16. POROSITY (%)	62.0			
17. LIQUID LIMIT				
18. PLASTIC LIMIT				
19. PLASTICITY INDEX				
20. LIQUIDITY INDEX				
21. COMPRESSION INDEX FROM LL				
22. COMPRESSIVE STRENGTH NATURAL (g/cm ²)				
	REMOULD (g/cm ²)			
23. COHESION NATURAL (g/cm ²)	53.4			94.2
	REMOULD (g/cm ²)	20.4		33.7
24. SENSITIVITY	3			3
25. ANGLE OF INTERNAL FRICTION (°)				
26. ACTIVITY				
27. MODULUS OF ELASTICITY				
28. SLUMP (in)				
29. REMARKS	Shell fragments through out core.			

**CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES**

MCG 09005019

NAVOCANO-EXP-316718-8 (10-62)

121-40

ANALYZED BY Oser, Rohrbisch DATE 31 July 1964

1. CRUISE NO.	R-006	227	4. SAMPLE NO. B.S.	6	7. TYPE CORER Kullenberg
2. LATITUDE	34° 32' N	"	5. DATE TAKEN (Day, month, year)	23 Jan 64	8. CORE LENGTH (cm)
3. LONGITUDE	120° 43' W	"	6. WATER DEPTH (m)	102	9. CORER PENETRATION (cm)
10. SUBSAMPLE DEPTH IN CORE (cm)	0-10	10-17	17-30	30-45	45-60
11. WET UNIT WEIGHT (g/cm^3)	1.76			1.66	
12. SPECIFIC GRAVITY OF SOLIDS	2.57				
13. WATER CONTENT (% dry weight)	51.3	43.6	49.3	48.4	56.1
14. VOID RATIO	1.09				
15. SATURATED VOID RATIO	1.12				
16. POROSITY (%)	52.2				
17. LIQUID LIMIT					
18. PLASTIC LIMIT					
19. PLASTICITY INDEX					
20. LIQUIDITY INDEX					
21. COMPRESSION INDEX FROM LL					
22. COMPRESSIVE STRENGTH NATURAL (kg/cm^2)	47.1				53.4
	REMOULD (kg/cm^2)	30.2			20.4
23. COHESION NATURAL (kg/cm^2)	2				3
	REMOULD (kg/cm^2)				
24. SENSITIVITY					
25. ANGLE OF INTERNAL FRICTION (°)					
26. ACTIVITY					
27. MODULUS OF ELASTICITY					
28. SLUMP (cm)					
29. REMARKS <i>1/2 cm water on top of core.</i>					

**CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES**

MGG 09005019

NAVOCANO-EXP-3167/18-8 (U-0-624)

ANALYZED BY Oser, Rohrhisch DATE 29 July 1964

121-40

1. CRUISE NO. F-0006	227	4. SAMPLE NO. B.S. 7	7. TYPE CORER Kullenberg
2. LATITUDE	34° 25' N.	5. DATE TAKEN (Day, month, year)	23 Jan 64
3. LONGITUDE	120° 56' W.	6. WATER DEPTH (m) 896	400 (ft.)
10. SUBSAMPLE DEPTH IN CORE (cm)	0-14	14-24	24-31
11. WET UNIT WEIGHT (g/cm³)		1.43	1.49
12. SPECIFIC GRAVITY OF SOLIDS		2.60	
13. WATER CONTENT (% dry weight)	---	94.4	103.5
14. VOID RATIO		2.70	
15. SATURATED VOID RATIO		2.69	
16. POROSITY (%)		72.3	
17. LIQUID LIMIT			
18. PLASTIC LIMIT			
19. PLASTICITY INDEX			
20. LIQUIDITY INDEX			
21. COMPRESSION INDEX FROM LL			
22. COMPRESSIVE STRENGTH NATURAL (g/cm²)			
	REMOULD (g/cm²)		
23. COHESION NATURAL (g/cm²)		40.1	50.1
	REMOULD (g/cm²)	23.2	26.7
24. SENSITIVITY		2	2
25. ANGLE OF INTERNAL FRICTION (°)			
26. ACTIVITY			
27. MODULUS OF ELASTICITY			
28. SCLWAP (%)			
29. REMARKS	Top of core cracked for 7 cm. Some dessication at the top. Strong H₂S odor. Core black.		

**CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES**

MGC 09005019

NAVOCFANO-EXP-3167/18-B (110-021)

121-4) ANALYZED BY User, Rohrhisch DATE 1 Aug 1964

1. CRUISE NO.	R-000	227	4. SAMPLE NO.	B.S. 8	7. TYPE CORER	Kullenberg
2. LATITUDE	34° 11' N	"	5. DATE TAKEN (Day, month, year)	23, Jun 64	8. CORE LENGTH (cm)	108.5
3. LONGITUDE	121° 05' W	"	6. WATER DEPTH (m)	1938; 1060 (fin)	9. CORER PENETRATION (cm)	
10. SUBSAMPLE DEPTH IN CORE (cm)	0-10	10-20	20-27	27-40	40-55	55-70
11. WET UNIT WEIGHT (g/cm ³)			1.46			
12. SPECIFIC GRAVITY OF SOLIDS			2.61			
13. WATER CONTENT (% dry weight)	72.2	85.7	93.7	93.4	100.1	101.1
14. VOID RATIO			2.45			
15. SATURATED VOID RATIO			2.45			
16. POROSITY (%)			71.0			
17. LIQUID LIMIT						
18. PLASTIC LIMIT						
19. PLASTICITY INDEX						
20. LIQUIDITY INDEX						
21. COMPRESSION INDEX FROM LL						
22. COMPRESSIVE STRENGTH NATURAL	(g/cm ²)					
REMOULD	(g/cm ²)					
23. COHESION NATURAL	(g/cm ²)	50.6		53.4		
REMOULD	(g/cm ²)	23.2		13.9		
24. SENSITIVITY		2		4		
25. ANGLE OF INTERNAL FRICTION (°)						
26. ACTIVITY						
27. MODULUS OF ELASTICITY						
28. SLUMP (in)						
29. REMARKS						

**CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES**

NAVOCANO-EXP-3167/18-B (10-62)

MGGC 09005019

121 - 31

ANALYZED by Oser, Rohrbisch date 1 Aug 1964

1. CRUISE NO. R-CC-6	2. SAMPLE No. 227	3. LATITUDE 33° 49'N	4. SAMPLE No. B.S. 9	5. DATE TAKEN (Day, month, year) 24 Jan 64	6. CORE LENGTH (cm) 117.5	7. TYPE CORER Kullenberg
10. SUBSAMPLE DEPTH IN CORE (cm)	0-10	17-30	30-45	45-60	60-67	67-82
11. WET UNIT WEIGHT (g/cm^3)	1.43			1.48		
12. SPECIFIC GRAVITY OF SOLIDS	2.63					
13. WATER CONTENT (% dry weight)	127.1	107.7	108.2	93.7	88.7	96.8
14. VOID RATIO	2.83					
15. SATURATED VOID RATIO	2.83					
16. POROSITY (%)	73.9					
17. LIQUID LIMIT						
18. PLASTIC LIMIT						
19. PLASTICITY INDEX						
20. LIQUIDITY INDEX						
21. COMPRESSION INDEX FROM LL						
22. COMPRESSIVE STRENGTH NATURAL (kg/cm^2)						
	REMOULD (kg/cm^2)					
23. COHESION NATURAL (kg/cm^2)	97.0			53.4		40.1
	REMOULD (kg/cm^2)	30.2		23.2		23.2
24. SENSITIVITY	3			2		2
25. ANGLE OF INTERNAL FRICTION ($^\circ$)						
26. ACTIVITY						
27. MODULUS OF ELASTICITY						
28. SLOPES (%)						
29. REARKS						

MCC09005019

CORE ANALYSIS SUMMARY SHEET ENGINEERING PROPERTIES

MANOOCÉANO EVO 3163/19 2 112 600

ANALYZED BY Oser, Rohrhisch & W 30 July 1964

121 - 30

1. CRUISE NO.	R-006	327	4. SAMPLE NO.	B.S. 10	7. TYPE CORER	Kullenberg
2. LATITUDE	33° 48' N		5. DATE TAKEN (day, month, year)	24 Jan 64	8. CORE LENGTH (cm)	28
3. LONGITUDE	120° 43' W		6. WATER DEPTH (m)	18.29	9. CORE PENETRATION (cm)	
10. SUBSAMPLE DEPTH IN CORE (cm)	0-10	10-17	17-28	Bottom		
11. WET UNIT WEIGHT (g/cm³)		1.58				
12. SPECIFIC GRAVITY OF SOLIDS		2.66				
13. WATER CONTENT (% dry weight)	55.9	62.2	54.3			
14. VOID RATIO		1.73				
15. SATURATED VOID RATIO		1.65				
16. POROSITY (%)	63.4					
17. LIQUID LIMIT						
18. PLASTIC LIMIT						
19. PLASTICITY INDEX						
20. LIQUIDITY INDEX						
21. COMPRESSION INDEX FROM LL						
22. COMPRESSIVE STRENGTH NATURAL (g/cm²)						
REMOLD (g/cm²)						
23. COHESION NATURAL (g/cm²)		33.7				
REMOLD (g/cm²)		16.9				
24. SENSITIVITY		2				
25. ANGLE OF INTERNAL FRICTION (°)						
26. ACTIVITY						
27. MODULUS OF ELASTICITY						
28. SLUMP (in.)						
29. REMARKS	Air space in original sample	Vane test.				

**CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES**

NAVOCANO-EXP-3167/18-8 (10-62)

ANALYZED BY Oser, Rohrhisch DATE 29 July 64

121-40

1. CRUISE NO. R-006	237	4. SAMPLE NO. B.S. 11	7. TYPE CORER Kullenberg
2. LATITUDE 34° 15' N.		5. DATE TAKEN (D.Y. month, year) 25 Jan 64	8. CORE LENGTH (cm) 60
3. LONGITUDE 120° 09' W		6. WATER DEPTH (m) 590 (ft) 290 (ft)	9. CORER PENETRATION (cm)
10. SUBSAMPLE DEPTH IN CORE (cm)	0-10	10-17	17-30
11. WET UNIT WEIGHT (g/cm ³)	1.26		1.32
12. SPECIFIC GRAVITY OF SOLIDS	2.59		
13. WATER CONTENT (% dry weight)	209.2	192.4	175.1
14. VOID RATIO	5.00		
15. SATURATED VOID RATIO	4.98		
16. POROSITY (%)	83.3		
17. LIQUID LIMIT			
18. PLASTIC LIMIT			
19. PLASTICITY INDEX			
20. LIQUIDITY INDEX			
21. COMPRESSION INDEX FROM LL			
22. COMPRESSIVE STRENGTH NATURAL (g/cm ²)			
	REHOLD (g/cm ²)		
23. COHESION NATURAL (g/cm ²)	20.5		77.3
	REHOLD (g/cm ²)	-	20.4
24. SENSITIVITY			4
25. ANGLE OF INTERNAL FRICTION (°)			
26. ACTIVITY			
27. MODULUS OF ELASTICITY			
28. SLUMP (in.)			
29. REMARKS H ₂ S odor			

CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES

MGG 09005019

NAVOCANO-EXP-3167/18-8 (10-62)

ANALYZED BY Owner, Rohrsch DATE July 1964

121-40

1. CRUISE NO.	10-006	AUFILE NO.	B. S. 12	7. TYPE CORER	Kullenberg
2. LATITUDE	34° 09' N.	DATE TAKEN (DAY, MONTH, YEAR)	26 Jan 64	8. CORE LENGTH (cm)	36
3. LONGITUDE	120° 18' W.	9. FATER DEPTH (m)	38.6	10. CORER PENETRATION (cm)	200 (fin)
10. SUBSAMPLE DEPTH IN CORE (cm)	0-10	10-17	17-26	26 (Bottom)	
11. WET UNIT WEIGHT (g/cm³)		1.67			
12. SPECIFIC GRAVITY OF SOLIDS		2.63			
13. WATER CONTENT (% dry weight)	52.6	59.8	37.4		
14. VOID RATIO		1.51			
15. SATURATED VOID RATIO		1.57			
16. POROSITY (%)		60.2			
17. LIQUID LIMIT					
18. PLASTIC LIMIT					
19. PLASTICITY INDEX					
20. LIQUIDITY INDEX					
21. COMPRESSION INDEX FROM LL					
22. COMPRESSIVE STRENGTH NATURAL (g/cm²)					
	REMOULD (g/cm²)				
23. COHESION NATURAL (g/cm²)		70.3			
	REMOULD (g/cm²)	26.7			
24. SENSITIVITY		3			
25. ANGLE OF INTERNAL FRICTION (°)					
26. ACTIVITY					
27. MODULUS OF ELASTICITY					
28. DENSITY (g)					
29. REMARKS					

**CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES**

MCG09005019

MAXOCFANO=EXP-3167118-8 110-624

ANALYZED BY OSEF BOKHARIECH DATE 31/11/1964

100 - 110

1. CRUISE NO. R-005	227	u. SAMPLE NO. R. S. 13	7. TYPE CORER Vullenberg
2. LATITUDE	34° 25' N.	v. DATE TAKEN (day, month, year)	8. CORE LENGTH 64 cm
3. LONGITUDE	119° 59' W	w. WATER DEPTH (m)	9. CORE PENETRATION (cm) 200 (fin) 78 cm
10. SUBSAMPLE DEPTH IN CORE (cm)	0-10	10-17	17-30
11. WET UNIT WEIGHT (g/cm^3)	1.38		30-45 45-60 60-67 67-78 Bottom
12. SPECIFIC GRAVITY OF SOLIDS			1.45
13. WATER CONTENT (% dry weight)	122.8	129.1	112.2 104.0 99.0 102.2 97.5
14. VOID RATIO			
15. SATURATED VOID RATIO			
16. POROSITY (%)			
17. LIQUID LIMIT			
18. PLASTIC LIMIT			
19. PLASTICITY INDEX			
20. LIQUIDITY INDEX			
21. COMPRESSION INDEX FROM LL			
22. COMPRESSIVE STRENGTH NATURAL	(kg/cm^2)		
	REMOULD	(kg/cm^2)	
23. COHESION NATURAL	(kg/cm^2)	16.9	33.7
	REMOULD	(kg/cm^2)	13.4
24. SENSITIVITY		1	23.3
25. ANGLE OF INTERNAL FRICTION ($^\circ$)		1	
26. ACTIVITY			
27. MODULUS OF ELASTICITY			
28. SLUMP (in)			
29. REMARKS H ₂ S odor.			

**CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES**

MGG 09005019

NAVOCANO-EXP-316718-B (10-62)

121-31

ANALYZED BY OSSER, Rohrhisch, DATE July 1964

1. CRUISE NO.	R-005	SAMPLE NO.	B.S. 14	7. TYPE CORE	<u>Kullenberg</u>
2. LATITUDE	33° 16' N	5. DATE TAKEN (Day, month, year)	27 Jan 64	8. CORE LENGTH(cm)	45
3. LONGITUDE	121° 10' W	6. WATER DEPTH (m)	32.74	9. CORE PERCENT Voids (%)	
10. SUBSAMPLE DEPTH IN CORE (cm)	0-10	10-17	17-30	30-45	45-60
11. WET UNIT WEIGHT (g/cm ³)		1.38			
12. SPECIFIC GRAVITY OF SOLIDS		2.63			
13. WATER CONTENT (% dry weight)	141.8	183.9	140.3	132.8	145.3
14. VOID RATIO		4.42			
15. SATURATED VOID RATIO		4.84			
16. POROSITY (%)		81.5			
17. LIQUID LIMIT					
18. PLASTIC LIMIT					
19. PLASTICITY INDEX					
20. LIQUIDITY INDEX					
21. COMPRESSION INDEX FROM LL					
22. COMPRESSIVE STRENGTH NATURAL (g/cm ²)					
	REHOLD (g/cm ²)				
23. COHESION NATURAL (g/cm ²)	47.1				
	REHOLD (g/cm ²)	13.4			
24. SENSITIVITY				43.6	47.2
				20.5	20.4
25. ANGLE OF INTERNAL FRICTION (°)		4		2	2
26. ACTIVITY					
27. MODULUS OF ELASTICITY					
28. SWAMP (%)					
29. REMARKS	H ₂ S odor in core.				

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**CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES**

MGG 09005019

NAVOCANO-EXP-3167/18-B (10-62)

121-30 ANALYZED BY Oser, Rohrhirsch DATE 30 July 1964

1. CRUISE NO. E-0016	227	4. SAMPLE NO. B 5	15	7. TYPE CORE Kollenberg
2. LATITUDE	33° 26' N.	5. DATE TAKEN (Date, month, year)	29 Jan 64	8. CORE LENGTH (cm) 85
3. LONGITUDE	120° 11' W.	6. WATER DEPTH (m)	134	9. CORER PENETRATION (cm) 620 (full)
10. SUBSAMPLE DEPTH IN CORE (cm)	0-10	10-17	17-30	30-45
11. WET UNIT WEIGHT (g/cm ³)	1.30	45-60	60-70	70-77
12. SPECIFIC GRAVITY OF SOLIDS	2.48	X		
13. WATER CONTENT (% dry weight)	161.8	165.0	172.9	144.5
14. VOID RATIO	4.06	X		
15. SATURATED VOID RATIO	4.09	X		
16. POROSITY (%)	80.2	X		
17. LIQUID LIMIT				
18. PLASTIC LIMIT				
19. PLASTICITY INDEX				
20. LIQUIDITY INDEX				
21. COMPRESSION INDEX FROM LL				
22. COMPRESSIVE STRENGTH NATURAL (g/cm ²)				
	REHOLD (g/cm ²)			
23. COHESION NATURAL (g/cm ²)		43.6		60.5
	REHOLD (g/cm ²)	20.4		20.4
24. SENSITIVITY	2		3	
25. ANGLE OF INTERNAL FRICTION (°)	2			
26. ACTIVITY				
27. MODULUS OF ELASTICITY				
28. SUMP (\$)				
29. REMARKS H ₂ S odor in core.				

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CORE ANALYSIS SUMMARY SHEET
ENGINEERING PROPERTIES

MGG 09005019

NAVOCEANO-EXP-3167/18-8 (10-628)

ANALYZED BY User_Rohrbins At date 2 Aug 1964

121-41

227

DRILL NO. B.S.

16

TYPE CORER

Kullenberg

1. CRUISE NO. EXP-3167	DATE TAKEN (DAY, month, year)	9 Jan 64	8. CORE LENGTH (cm)	187
2. LATITUDE 34° 55' N.	WATER DEPTH (ft)	1600 (ft)	9. CORER PENETRATION (cm)	
3. LONGITUDE 121° 51' W.	0-10	25-30	47-60	60-67
4. SUBSAMPLE DEPTH IN CORE (cm)	10-25	32-47	67-80	80-95
5. WET UNIT WEIGHT (g/cm ³)	1.43	1.41		1.48
6. SPECIFIC GRAVITY OF SOLIDS	2.63			
7. WATER CONTENT (% dry weight)	109.5	114.1	106.4	112.9
8. VOID RATIO	2.81			
9. SATURATED VOID RATIO	2.80			
10. POROSITY (%)	73.8			
11. LIQUID LIMIT				
12. PLASTIC LIMIT				
13. PLASTICITY INDEX				
14. LIQUIDITY INDEX				
15. COMPRESSION INDEX FROM LL				
16. COMPRESSIVE STRENGTH NATURAL (g/cm ²)				
17. REHOLD (g/cm ²)				
18. COHESION NATURAL (g/cm ²)	63.9		40.1	104.0
19. REHOLD (g/cm ²)	26.7		116.9	33.7
20. SENSITIVITY	2		2	3
21. ANGLE OF INTERNAL FRICTION (°)				
22. ACTIVITY				
23. MODULUS OF ELASTICITY				
24. DENSITY (g/cm ³)				
25. REMARKS				